

# TE 1

Bedienungsanleitung **Operating instructions** Használati utasítás Instrukcja obsługi Инструкция по эксплуатации Návod k obsluze Návod na obsluhu Upute za uporabu Navodila za uporabo Ръководство за обслужване ІНСТРУКЦІЯ З ЕКСПЛУАТАЦІЇ Пайдалану бойынша басшылық Instrucțiuni de utilizare **Kulllanma Talimatı** دليل الاستعمال 取扱説明書 사용설명서 操作說明書

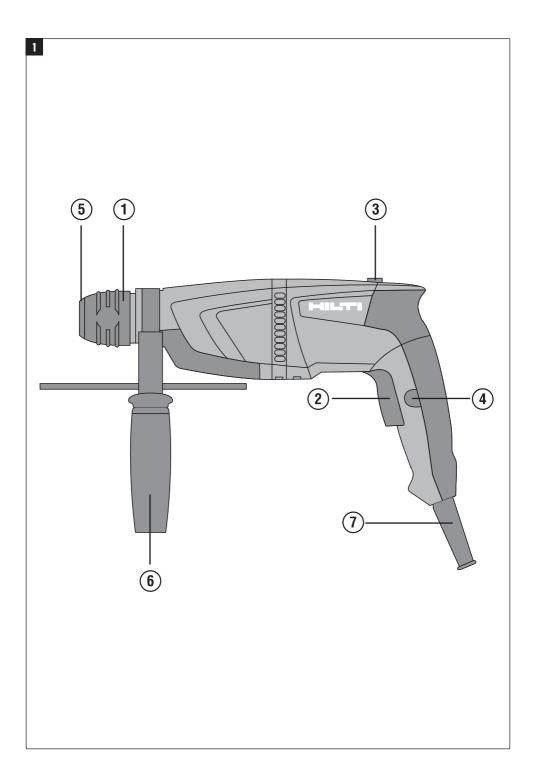
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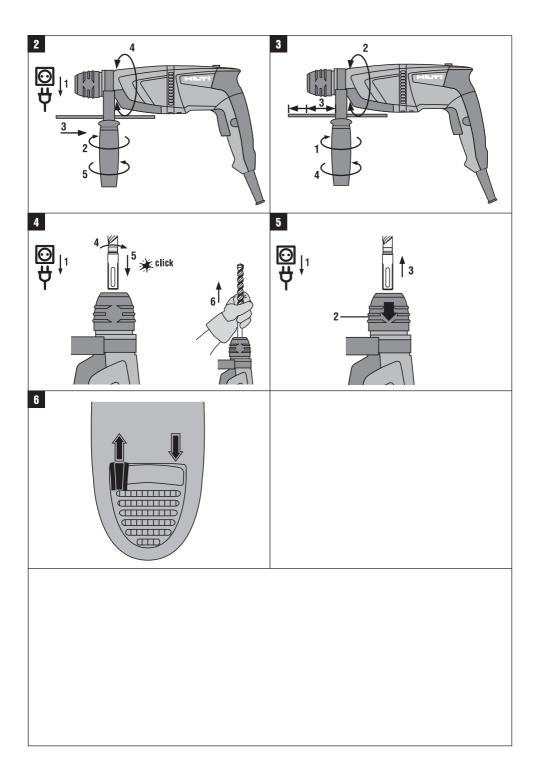
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#### ORIGINAL OPERATING INSTRUCTIONS

# TE 1 rotary hammer

It is essential that the operating instructions are read before the power tool is operated for the first time.

Always keep these operating instructions together with the power tool.

Ensure that the operating instructions are with the power tool when it is given to other persons.

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■ These numbers refer to the corresponding illustrations. The illustrations can be found on the fold-out cover pages. Keep these pages open while studying the operating instructions.

In these operating instructions, the designation "the power tool" always refers to the TE 1 rotary hammer.

#### Parts, operating controls and indicators 1

- (1) Chuck
- (2) Control switch
- (3) Forward / reverse switch
- 4 Lockbutton for sustained operation
- 5 Dust shield
- (6) Side handle with depth gauge
- (7) Supply cord

# 1 General information

# 1.1 Safety notices and their meaning

**DANGER**Draws attention to imminent danger that will lead to serious bodily injury or fatality.

## WARNING

Draws attention to a potentially dangerous situation that could lead to serious personal injury or fatality.

#### CAUTION

Draws attention to a potentially dangerous situation that could lead to slight personal injury or damage to the equipment or other property.

#### NOTE

Draws attention to an instruction or other useful informa-

# 1.2 Explanation of the pictograms and other information

#### Warning signs





General warning

Warning: electricity

#### **Obligation signs**



Wear eye



Wear a hard hat



protection



protective gloves

Serial no .:

## Location of identification data on the power tool

The type designation and serial number can be found on the type identification plate on the machine or tool. Make a note of this data in your operating instructions and always refer to it when making an enguiry to your Hilti representative or service department.

Type:		
Generation: 02		



en



breathing protection

#### Symbols



Read the operating instructions before use



Returning materials for recycling



Forward / reverse



Amps

Hъ



Hertz

Watts

Volts

Revolutions per minute

# 2 Description

#### 2.1 Use of the product as directed

The power tool is an electrically-powered rotary hammer with pneumatic hammering mechanism.

The power tool is designed for professional use and may be operated, serviced and maintained only by trained, authorized personnel. This personnel must be informed of any special hazards that may be encountered. The power tool and its ancillary equipment may present hazards when used incorrectly by untrained personnel or when used not as directed.

The power tools are designed for drilling in concrete and masonry.

The working environment may be as follows: construction site, workshop, renovation, conversion or new construction. The power tool may be used only in a dry environment.

To avoid the risk of injury, use only genuine Hilti accessories and insert tools.

Observe the information printed in the operating instructions concerning operation, care and maintenance.

The power tool may be operated only when connected to a power supply providing a voltage and frequency in compliance with the information given on its type identification plate.

Do not use the power tool where there is a risk of fire or explosion.

Working on materials hazardous to the health (e.g. asbestos) is not permissible.

Modification of the power tool or tampering with its parts is not permissible.

#### 2.2 Chuck

TE-C CLICK chuck

#### 2.3 Switches

Control switch with electronic speed control Lockbutton for sustained operation

### 2.4 Grips

Pivotable side handle with depth gauge Vibration-absorbing grip

#### 2.5 Protective feature

Mechanical slip clutch

#### 2.6 Lubrication

Grease Jubrication

#### 2.7 Items supplied as standard

- Power tool
- 1 Operating instructions
- 1 Hilti cardboard box or toolbox

#### 2.8 Using extension cords

Use only extension cords of a type approved for the application and with conductors of adequate cross section. The power tool may otherwise loose performance and the extension cord may overheat. Check the extension cord for damage at regular intervals. Replace damaged extension cords.

Recommended minimum conductor cross section and max. cable lengths

Conductor cross section	1.5 mm²	2.5 mm <sup>2</sup>	3.5 mm <sup>2</sup>
Mains voltage 110-127 V	30 m	50 m	
Mains voltage 220-240 V	75 m	100 m	

Do not use extension cords with 1.25 mm<sup>2</sup> conductor cross section.

## 2.9 Using extension cords outdoors

When working outdoors, use only extension cords that are approved and correspondingly marked for this application.

#### 2.10 Using a generator or transformer

This power tool may be powered by a generator or transformer which fulfills the following conditions: The unit must provide a power output in watts of at least twice the value printed on the type identification plate on the power tool. The operating voltage must remain within +5% and -15% of the rated voltage at all times, frequency must be in the 50 – 60 Hz range and never above 65 Hz, and the unit must be equipped with automatic voltage regulation and starting boost.

Never operate other power tools or appliances from the generator or transformer at the same time. Switching other power tools or appliances on and off may cause undervoltage and / or overvoltage peaks, resulting in damage to the power tool.

# Tools Designation Description Hammer drill bits, short Ø 4...18 mm, Hammer drilling in concrete, masonry and natural stone Hammer drill bits, long Ø 4...18 mm, Hammer drilling in concrete, masonry and natural stone

Right of technical changes reserved.

#### NOTE

The power tool is available in various voltage ratings. Please refer to the power tool's type identification plate for details of its rated voltage and rated input power.

Power tool	TE 1
Rated power input	650 W
Rated current input	Rated voltage 110 V: 6.5 A Rated voltage 120 V: 6.5 A Rated voltage 127 V: 6.5 A Rated voltage 220 V: 3.1 A Rated voltage 230 V: 3.0 A Rated voltage 240 V: 2.9 A
Mains frequency	5060 Hz
Weight in accordance with EPTA procedure 01/2003	2.4 kg
Dimensions (L x W x H)	330 mm x 79 mm x 203 mm
Hammer drilling speed	0930/min
Hammering speed	04,500/min
Single impact energy in accordance with EPTA procedure 05/2009	1.5 J

#### Other information about the power tool

Drilling performance in medium-hard concrete	Ø 8 mm: 25 cm³/min
	Ø 10 mm: 33 cm³/min
	Ø 12 mm: 35 cm³/min
Protection class as per EN	Protection class II (double insulated) as perEN 60745-1

#### NOTE

The vibration emission level given in this information sheet has been measured in accordance with a standardised test given in EN 60745 and may be used to compare one tool with another. It may be used for a preliminary assessment of exposure. The declared vibration emission level represents the main applications of the tool. However if the tool is used for different applications, with different accessories or poorly maintained, the vibration emission may differ. This may significantly increase the exposure level over the total working period. An estimation of the level of exposure to vibration should also take into account the times when the tool is switched off or when it is running but not actually doing the job. This may significantly reduce the exposure level over the total working period. Identify additional safety measures to protect the operator from the effects of vibration such as: maintain the tool and the accessories, keep the hands warm, organisation of work patterns.

#### Noise and vibration information (measured in accordance with EN 60745):

Typical A-weighted sound power level	100 dB (A)
Typical A-weighted emission sound pressure level	89 dB (A)
Uncertainty for the given sound level as per EN 60745	3 dB (A)

#### Additional information in accordance with EN 60745

Triaxial vibration values (vibration vector sum)	Measured in accordance with EN 60745-2-6
Hammer drilling in concrete, a <sub>h, HD</sub>	15 m/s <sup>2</sup>
Uncertainty (K)	1.5 m/s <sup>2</sup>

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# 5 Safety instructions

#### 5.1 General Power Tool Safety Warnings

# a) N WARNING

Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury. Save all warnings and instructions for future reference. The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

#### 5.1.1 Work area safety

- Keep work area clean and well lit. Cluttered or dark areas invite accidents.
- b) Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes.
- Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.

#### 5.1.2 Electrical safety

- a) Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.
- b) Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.
- c) Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
- d) Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
- When operating a power tool outdoors, use an extension cord suitable for outdoor use. Use of a cord suitable for outdoor use reduces the risk of electric shock.
- f) If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply. Use of an RCD reduces the risk of electric shock.

#### 5.1.3 Personal safety

- a) Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.
- Use personal protective equipment. Always wear eye protection. Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing

- protection used for appropriate conditions will reduce personal injuries.
- c) Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool. Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.
- d) Remove any adjusting key or wrench before turning the power tool on. A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
- f) Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewellery or long hair can be caught in moving parts.
- g) If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of dust collection can reduce dust-related hazards.

#### 5.1.4 Power tool use and care

- a) Do not force the power tool. Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.
- b) Do not use the power tool if the switch does not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- c) Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.
- d) Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users.
- e) Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
- f) Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- g) Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation.

#### 5.1.5 Service

a) Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained.

#### 5.2 Hammer safety warnings

- a) Wear ear protectors. Exposure to noise can cause hearing loss.
- Use auxiliary handles, if supplied with the tool.
   Loss of control can cause personal injury.
- c) Hold power tool by insulated gripping surfaces, when performing an operation where the cutting accessory may contact hidden wiring or its own cord. Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.

#### 5.3 Additional safety precautions

#### 5.3.1 Personal safety

- Keep the grips dry, clean and free from oil and grease.
- b) Check that the side handle is fitted correctly and tightened securely.
- c) Wear a dust mask.
- Improve the blood circulation in your fingers by relaxing your hands and exercising your fingers during breaks between working.
- e) Children must be instructed not to play with the power tool.
- The power tool is not intended for use by children, by debilitated persons or those who have received no instruction or training.
- g) Avoid touching rotating parts. Switch the power tool on only after bringing it into position at the workpiece. Touching rotating parts, especially rotating insert tools, may lead to injury.
- Always lead the supply cord and extension cord away from the power tool to the rear while working. This helps to avoid tripping over the cord while working.
- Dust from material such as paint containing lead, some wood species, minerals and metal may be harmful. Contact with or inhalation of the dust may cause allergic reactions and/or respiratory diseases to the operator or bystanders. Certain kinds of dust are classified as carcinogenic such as oak and beech dust especially in conjunction with additives for wood conditioning (chromate, wood preservative). Material containing asbestos must only be treated by specialists. Where the use of a dust extraction device is possible it shall be used. To achieve a high level of dust collection, use a suitable vacuum cleaner of the type recommended by Hilti for wood dust and/or mineral dust together with this tool. Ensure that the workplace is well ventilated. The use of a dust mask of filter class P2 is recommended. Follow national requirements for the materials you want to work with.

#### 5.3.2 Power tool use and care

- a) Secure the workpiece. Use clamps or a vice to secure the workpiece. The workpiece is thus held more securely than by hand and both hands remain free to operate the power tool.
- b) Check that the insert tools used are compatible with the chuck system and that they are secured in the chuck correctly.
- c) In the event of a power failure or interruption in the electric supply, switch the power tool off, unplug the supply cord and release the switch lockbutton (if applicable). This will prevent accidental restarting when the electric power returns.
- d) Avoid applying an excessive amount of grease to the drill bit connection end. Grease may otherwise be forced out of the chuck when the power tool is in operation.

#### 5.3.3 Electrical safety

- a) Before beginning work, check the working area (e.g. using a metal detector) to ensure that no concealed electric cables or gas and water pipes are present. External metal parts of the power tool may become live, for example, when an electric cable is damaged accidentally. This presents a serious risk of electric shock.
- b) Check the power tool's supply cord at regular intervals and have it replaced by a qualified specialist if found to be damaged. If the machine's supply cord is damaged it must be replaced with a specially-prepared and approved supply cord available from Hilti Customer Service. Check extension cords at regular intervals and replace them if found to be damaged. Do not touch the supply cord or extension cord if it is damaged while working. Disconnect the mains plug from the power outlet. Damaged supply cords or extension cords present a risk of electric shock.
- c) Dirty or dusty power tools which have been used frequently for work on conductive materials should be checked at regular intervals at a Hilti Service Center. Under unfavorable circumstances, dampness or dust adhering to the surface of the power tool, especially dust from conductive materials, may present a risk of electric shock.
- d) When working outdoors with an electric tool check to ensure that the tool is connected to the electric supply by way of a ground fault circuit interrupter (RCD) with a rating of max. 30 mA (tripping current). Use of a ground fault circuit interrupter reduces the risk of electric shock.
- Use of a ground fault circuit interrupter (RCD residual current device) with a maximum tripping current of 30 mA is recommended.

#### 5.3.4 Work area safety

- Ensure that the workplace is well ventilated. Exposure to dust at a poorly ventilated workplace may result in damage to the health.
- Keep bystanders a safe distance away from work area. Anyone entering the work area must

wear personal protective equipment. Fragments of workpiece or of a broken accessory may fly away and cause injury beyond immediate area of operation.

c) If the work involves breaking right through, take the appropriate safety measures at the opposite side. Parts breaking away could fall out and / or fall down and injure other persons.

### 5.3.5 Personal protective equipment











The user and any other persons in the vicinity must wear suitable eye protection, a hard hat, ear protection, protective gloves and breathing protection while the tool is in use.

#### 6 Before use



#### 6.1 Fitting the side handle 2

#### CAUTION

Remove the depth gauge from the side handle in order to avoid injury.

 Disconnect the supply cord plug from the power outlet.

- Release the side handle clamping band by turning the handle counterclockwise.
- Slide the side handle clamping band over the chuck and onto the cylindrical section at the front end of the power tool.
- 4. Pivot the side handle into the desired position.
- CAUTION Check that the clamping band is engaged in the groove provided on the power tool.
   Secure the side handle by turning the grip clockwise.

# 6.2 Use of extension cords and generators or transformers

Please refer to the "Description" section.

### 7 Operation



#### WARNING

The electric supply voltage must comply with the information given on the type identification plate on the power tool.

#### CAUTION

Check that the side handle is fitted correctly and tightened securely.

#### CAUTION

In the event of the drill bit sticking, the power tool will pivot about its own axis. Always use the power tool with the side handle fitted and hold it securely with both hands so that the resulting opposing force causes the slip clutch to release in the event of the drill bit sticking. Use clamps or a vice to hold the workpiece securely.

### 7.1 Preparing for use

#### CAUTION

Remove the depth gauge from the side handle and the insert tool from the chuck in order to avoid injury.

#### CAUTION

Wear protective gloves when changing insert tools as the insert tools get hot during use.

## 7.1.1 Adjusting the depth gauge 3

#### CAUTION

Use only a depth gauge with a maximum length of 180 mm.

- Release the side handle clamping band by turning the handle counterclockwise.
- 2. Pivot the side handle into the desired position.
- 3. Adjust the depth gauge to the desired drilling depth.
- Tighten the side handle securely by turning the grip section. This also clamps the depth gauge in position.

#### 7.1.2 Fitting the insert tool 4

- Disconnect the supply cord plug from the power outlet
- Check that the connection end of the insert tool is clean and lightly greased. Clean it and grease it if necessary.
- Check that the sealing lip of the dust shield is clean and in good condition. Clean the dust shield if necessary or replace it if the sealing lip is found to be damaged (please refer to the "Care and maintenance" section).
- Push the insert tool into the chuck and rotate it while applying slight pressure until it engages in the guide grooves.
- Push the insert tool further into the chuck until it is heard to engage.
- Check that the insert tool has engaged correctly by pulling it.

#### 7.1.3 Removing the insert tool 5

- Disconnect the supply cord plug from the power outlet
- Open the chuck by pulling back the chuck release sleeve.
- 3. Pull the insert tool out of the chuck.

#### 7.2 Operation



#### CAUTION

Working on the material may cause it to splinter. Wear eye protection and protective gloves. Wear breathing protection if no dust removal system is used. Splintering material presents a risk of injury to the eyes and body.

#### CAUTION

The work generates noise. **Wear ear protectors.** Exposure to noise can cause hearing loss.

#### 7.2.1 Working at low temperatures

#### NOTE

The hammering mechanism works only when the power tool has reached a minimum operating temperature.

Bring the drill bit briefly into contact with the base material while allowing the power tool to run under no load until the minimum operating temperature is reached. If necessary, repeat this procedure until the hammering mechanism begins to operate.

#### 7.2.2 Hammer drilling

- Bring the side handle into the desired position and check that it is fitted correctly and secured.
- 2. Plug the supply cord into the power outlet.
- 3. Position the power tool and drill bit at the point where the hole is to be drilled.
- Press the control switch slowly (drill at a low speed until the drill bit centers itself in the hole).
- Press the control switch fully to continue drilling with full power.
- Do not apply excessive pressure. This will not increase the power tool's hammering performance. Lower pressure extends the life of the insert tool.
- Reduce drilling speed shortly before breaking through in order to avoid spalling.

#### 7.2.3 Forward / reverse 6

#### CAUTION

Do not operate the forward / reverse switch while the motor is running.

Move the forward/reverse switch to the "Forward" or "Reverse" position.

### 8 Care and maintenance

#### CAUTION

Disconnect the mains plug from the power outlet.

#### 8.1 Care of insert tools

Clean off dirt and dust deposits adhering to the insert tools and protect them from corrosion by wiping the insert tools from time to time with an oil-soaked rag.

#### 8.2 Care of the power tool

#### CAUTION

Keep the power tool, especially its grip surfaces, clean and free from oil and grease. Do not use cleaning agents which contain silicone.

Never operate the power tool when the ventilation slots are blocked. Clean the ventilation slots carefully using a dry brush. Do not permit foreign objects to enter the interior of the power tool. Clean the outside of the power tool at regular intervals with a slightly damp cloth. Do not use a spray, steam pressure cleaning equipment or running water for cleaning. This may negatively affect the electrical safety of the power tool.

#### 8.3 Cleaning or replacing the dust shield

Clean the dust shield on the chuck with a dry, clean cloth at regular intervals. Clean the sealing lip by wiping it carefully and then grease it again lightly with Hilti grease. It is essential that the dust shield is replaced if the sealing lip is found to be damaged. Pull the chuck sleeve back, hold it securely in this position and remove the dust shield. Clean the area of the chuck in contact with dust shield and then fit a new dust shield. Press it in firmly until it engages.

#### 8.4 Maintenance

#### WARNING

Repairs to the electrical section of the power tool may be carried out only by trained electrical specialists.

Check all external parts of the power tool for damage at regular intervals and check that all controls operate faultlessly. Do not operate the power tool if parts are damaged or when the controls do not function faultlessly. If necessary, the power tool should be repaired by Hilti Service.

# 8.5 Checking the power tool after care and maintenance

After carrying out care and maintenance work on the power tool, check that all protective and safety devices are fitted and that they function faultlessly.

### 9 Troubleshooting

Fault	Possible cause	Remedy
The power tool doesn't start.	Interruption in the electric supply.	Plug in another electric appliance and check whether it works.
	Supply cord or plug defective.	Have this checked by a trained elec- trical specialist and replaced if neces- sary.
	The control switch is defective.	Have this checked by a trained elec- trical specialist and replaced if neces- sary.
	Other electrical fault.	Have this checked by a trained electrical specialist.
	The carbon brushes are worn.	Have this checked by a trained elec- trical specialist and replaced if neces- sary.
No hammering action.	The power tool is too cold.	Allow the power tool to warm up to the minimum operating temperature. See section: 7.2.1 Working at low temperatures
The power tool doesn't achieve full power.	The extension cord's conductor cross section is inadequate.	Use an extension cord with an adequate conductor cross section. (Please refer to the "Description" section.)
	The control switch is not pressed fully.	Press the control switch as far as it will go.
The drill bit can't be released.	The chuck is not pulled back fully.	Pull the chuck back as far as it will go and remove the insert tool.
The drill bit makes no progress.	The forward/reverse switch is set to reverse rotation.	Set the forward/reverse switch to forward rotation.

# 10 Disposal



Most of the materials from which Hilti power tools or appliances are manufactured can be recycled. The materials must be correctly separated before they can be recycled. In many countries, Hilti has already made arrangements for taking back your old power tools or appliances for recycling. Please ask your Hilti customer service department or Hilti representative for further information.



For EC countries only

Disposal of electric tools together with household waste is not permissible.

In observance of the European Directive on waste electrical and electronic equipment and its implementation in accordance with national law, electrical appliances that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

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# 11 Manufacturer's warranty - tools

Please contact your local Hilti representative if you have questions about the warranty conditions.

# 12 EC declaration of conformity (original)

Designation:	Rotary hammer	
Type:	TE 1	
Generation:	02	
Year of design:	2008	

We declare, on our sole responsibility, that this product complies with the following directives and standards: 2004/108/EC, 2006/42/EC, 2011/65/EU, EN 60745-1, EN 60745-2-6, EN ISO 12100.

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